

WHAT IS CLAIMED IS:

1. A centrifuge apparatus operable at certain predetermined parameters depending upon a product to be separated and is useable with a plurality of rotor assemblies wherein a first rotor assembly of said plurality of rotor assemblies includes a first core having a first core configuration which is contained within a rotor housing of the first rotor assembly to define a first volume capacity such that the product passing through the first rotor assembly having the first volume capacity during rotation of the first rotor assembly in the centrifuge apparatus achieves a first particle separation of the product, and a second rotor assembly of said plurality of rotor assemblies includes a second core having a second core configuration which is contained within a rotor housing of the second rotor assembly to define a second volume capacity such that product passing through the second rotor assembly having the second volume capacity during rotation of the second rotor assembly in the centrifuge apparatus achieves a second particle separation of the product which is a linear change with respect to the first particle separation.

2. The centrifuge apparatus of claim 1, wherein the rotor housing of the first and the second rotor assemblies is the same rotor housing.

3. The centrifuge apparatus of claim 1, wherein the rotor housings of the first and second rotor assemblies have the same residence length.

4. A centrifuge apparatus operable at certain predetermined parameters depending upon a product to be separated and is useable with a plurality of rotor assemblies wherein a first rotor assembly of said plurality of rotor assemblies has a first residence length such that the product passing through the first rotor assembly during rotation thereof in the

centrifuge apparatus achieves a first particle separation of the product and a second rotor assembly of said plurality of rotor assemblies has a second residence length such that the product passing through the second rotor assembly during rotation thereof in the centrifuge apparatus achieves a second particle separation of the product which is a linear change with respect to the first particle separation.

5. A method for achieving linear scale separation of particles of a product during centrifugation comprising the steps of:

operating a centrifuge apparatus at certain predetermined parameters depending upon a product to be separated;

placing a first core having a first core configuration in a rotor housing to define a first rotor assembly having a first volume capacity;

rotating the first rotor assembly having the first volume assembly having the first volume capacity in the centrifuge apparatus and passing the product through the first rotor assembly during rotation thereof so as to achieve a first particle separation of the product;

substituting a second core having a second core configuration within the rotor housing to define a second rotor assembly having a second volume capacity; and

rotating the second rotor assembly having the second volume capacity in the centrifuge apparatus and passing the product through the second rotor assembly during rotation thereof so as to achieve a second particle separation of the product which is a linear change with respect to the first particle separation.

6. A method for achieving linear scale separation of particles of a product during centrifugation comprising the steps of:

operating a centrifuge apparatus at certain predetermined parameters depending upon a product to be separated; rotating a first rotor assembly having a first residence length in the centrifuge apparatus; passing the product through the first rotor assembly during rotation thereof to achieve a first particle separation of the product; substituting the first rotor assembly in the centrifuge apparatus with a second rotor assembly having a second residence length and rotating the second rotor assembly within the centrifuge apparatus; and passing the product through the second rotor assembly during rotation thereof to achieve a second particle separation of the product which is a linear change with respect to the first particle separation.

7. A centrifuge apparatus for separating particles of a product, said apparatus comprising means for setting a number of parameters and adjustment means operable at the set parameters and having one of a rotor assembly selected from among a plurality of rotor assemblies so as to enable volume capacity to be adjusted.

8. The centrifuge apparatus for separating particles of a product of claim 7, wherein said adjustment means enables substitution of a rotor core of varying configurations within each of said plurality of rotor assemblies.

9. The centrifuge apparatus for separating particles of product of claim 7, wherein each respective rotor core of the plurality of rotor assemblies includes a plurality of fins arranged in a predetermined manner.

10. The centrifuge apparatus for separating particles of a product of claim 7, wherein the plurality of fins of each respective rotor core are equidistantly spaced apart from each other.

11. The centrifuge apparatus for separating particles of a product of claim 7, wherein between 0 to 36 fins extend radially outwardly from the rotor core.

12. The centrifuge apparatus for separating particles of claim 11, wherein between 0 to 6 fins extend radially outwardly from the rotor core.

13. A rotor assembly rotatable in a centrifuge assembly for separating particles of a product passing therethrough, said rotor assembly comprising:

a rotor housing of a defined volume; and
a rotor core freely rotatable within the rotor housing, said rotor core including a plurality of product flow distribution channels and a plurality of fins extending radially therefrom of a predetermined configuration to define a volume of the predetermined rotor core.

14. A rotor core for a rotor assembly rotatable in a centrifuge assembly for separating particles of a product passing through the rotor assembly, said rotor core including a plurality of product flow distribution channels and a plurality of fins extending radially therefrom of a predetermined configuration to define a predetermined volume of the rotor core.

15. The rotor core of claim 14, wherein the fins of said plurality of fins are equidistantly spaced apart from each other.

16. The rotor core of claim 14, wherein said plurality of fins are between 0 to 36 in number.

17. The rotor core of claim 16, wherein said plurality of fins are between 0 to 6 in number.